

ATP III Guidelines

Specific Dyslipidemias

Specific Dyslipidemias: Very High LDL Cholesterol (\geq 190 mg/dL)

Causes and Diagnosis

- Genetic disorders
 - Monogenic familial hypercholesterolemia
 - Familial defective apolipoprotein B-100
 - Polygenic hypercholesterolemia
- Family testing to detect affected relatives

Specific Dyslipidemias:

Very High LDL Cholesterol (≥ 190 mg/dL) (continued)

Management

- LDL-lowering drugs
 - Statins (higher doses)
 - Statins + bile acid sequestrants
 - Statins + bile acid sequestrants + nicotinic acid

Specific Dyslipidemias: Elevated Triglycerides

Classification of Serum Triglycerides

- Normal <150 mg/dL
- Borderline high 150–199 mg/dL
- High 200–499 mg/dL
- Very high ≥ 500 mg/dL

Specific Dyslipidemias:

Elevated Triglycerides (≥ 150 mg/dL)

Causes of Elevated Triglycerides

- Obesity and overweight
- Physical inactivity
- Cigarette smoking
- Excess alcohol intake

Specific Dyslipidemias: Elevated Triglycerides

Causes of Elevated Triglycerides (continued)

- High carbohydrate diets (>60% of energy intake)
- Several diseases (type 2 diabetes, chronic renal failure, nephrotic syndrome)
- Certain drugs (corticosteroids, estrogens, retinoids, higher doses of beta-blockers)
- Various genetic dyslipidemias

Specific Dyslipidemias: Elevated Triglycerides (continued)

Non-HDL Cholesterol: Secondary Target

- Non-HDL cholesterol = VLDL + LDL cholesterol
= (Total Cholesterol – HDL cholesterol)
- VLDL cholesterol: denotes atherogenic remnant lipoproteins
- Non-HDL cholesterol: secondary target of therapy when serum triglycerides are ≥ 200 mg/dL (esp. 200–499 mg/dL)
- Non-HDL cholesterol goal:
LDL-cholesterol goal + 30 mg/dL

Comparison of LDL Cholesterol and Non-HDL Cholesterol Goals for Three Risk Categories

Risk Category	LDL-C Goal (mg/dL)	Non-HDL-C Goal (mg/dL)
CHD and CHD Risk Equivalent (10-year risk for CHD >20%)	<100	<130
Multiple (2+) Risk Factors and 10-year risk <20%	<130	<160
0–1 Risk Factor	<160	<190

Specific Dyslipidemias: Elevated Triglycerides

Non-HDL Cholesterol: Secondary Target

- Primary target of therapy: LDL cholesterol
- Achieve LDL goal before treating non-HDL cholesterol
- Therapeutic approaches to elevated non-HDL cholesterol
 - Intensify therapeutic lifestyle changes
 - Intensify LDL-lowering drug therapy
 - Nicotinic acid or fibrate therapy to lower VLDL

Specific Dyslipidemias: Elevated Triglycerides

Management of Very High Triglycerides (≥ 500 mg/dL)

- Goal of therapy: prevent acute pancreatitis
- Very low fat diets ($\leq 15\%$ of caloric intake)
- Triglyceride-lowering drug usually required (fibrate or nicotinic acid)
- Reduce triglycerides *before* LDL lowering

Specific Dyslipidemias: Low HDL Cholesterol

Causes of Low HDL Cholesterol (<40 mg/dL)

- Elevated triglycerides
- Overweight and obesity
- Physical inactivity
- Type 2 diabetes
- Cigarette smoking
- Very high carbohydrate intakes (>60% energy)
- Certain drugs (beta-blockers, anabolic steroids, progestational agents)

Specific Dyslipidemias: Low HDL Cholesterol

Management of Low HDL Cholesterol

- LDL cholesterol is primary target of therapy
- Weight reduction and increased physical activity (if the metabolic syndrome is present)
- Non-HDL cholesterol is secondary target of therapy (if triglycerides ≥ 200 mg/dL)
- Consider nicotinic acid or fibrates (for patients with CHD or CHD risk equivalents)

Specific Dyslipidemias:

Diabetic Dyslipidemia

- Lipoprotein pattern: atherogenic dyslipidemia (high TG, low HDL, small LDL particles)
- LDL-cholesterol goal: <100 mg/dL
- Baseline LDL-cholesterol ≥ 130 mg/dL
 - Most patients require LDL-lowering drugs
- Baseline LDL-cholesterol 100–129 mg/dL
 - Consider therapeutic options
- Baseline triglycerides: ≥ 200 mg/dL
 - Non-HDL cholesterol: secondary target of therapy